

Air Angle Die Grinder

User Manual



SPECIFICATIONS

Collet Size	1/*4"
No load speed	20,000 RPM
Air consumption	4 CFM @ 90 PSI
Air Inlet	1/4" NPT
Weight	0.50 Kg
Air outlet	Rear exhaust

DESCRIPTION

Lever lock throttle for safety. Durable lightweight composite housing design also helps reduce vibration. Air Angle Die Grinder is ideal for light weld, grinder, porting and polishing applications.

IMPORTANT SAFETY PRECAUTIONS

WARNING! Read and understand all instructions before using this tool. Failure to follow all instructions may result in electric shock, fire and/or personal injury. Keep this manual for the safety warnings and precautions, operating, inspection and maintenance instructions. When using this tool, basic precautions should always be followed to reduce the risk of personal injury and/or damage to the equipment. Note that when this manual refers to a part number, it refers to the parts list included.

WORK AREA

1. Keep your work area clean and well lit. Cluttered and dark areas invite accidents.
2. Operate in a safe work environment. Do not use in damp or wet locations. Do not expose to rain. Do not use in the presence of flammable gases or liquids.
3. Keep children, bystanders and visitors away from the work area. Distraction can cause you to lose control. Do not let them handle tools, hoses or extension cords. No one should be in the work area if they are not wearing suitable protective equipment.
4. Store unused equipment. When not in use, tools must be stored in a dry location to prevent rust. Always lock up tools and keep them out of reach of children.

PERSONAL SAFETY

1. Use eye, face, head, breathing and ear protection. Always wear ANSI approved impact safety goggles, which must provide both frontal and side protection. Protect your hands with suitable gloves. Wear a full face shield if your work creates metal filings or wood chips. Protect your head from falling objects by wearing a hard hat. Wear an ANSI approved dust mask or respirator when working around metal, wood and chemical dusts and mists. Wear ANSI approved earplugs.
2. Do not over reach; keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.
3. Dress properly, wear protective equipment. Do not wear loose clothing or jewelry as they can be caught in moving parts. Tie back long hair. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working.
4. Stay alert, watch what you are doing and use your common sense. Do not operate any machine or tool when you are tired, under the influence of drugs, alcohol or medications.
5. Use clamps or other practical ways to secure and support the work piece to a stable platform. Holding the work piece by hand or against your body is unstable and may lead to loss of control.

TOOL USE AND CARE

1. Use the right tool for the job. Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. The tool will perform better and more safely at the task for which it was intended. Do not modify this tool or use for a purpose for which it was not designed.
2. Securely hold this tool using both hands. Using tools with only one hand can result in loss of control.
3. Maintain tools with care. Keep tools clean, sharp and in good condition for a better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool fittings, alignment and hoses periodically and, if damaged, have them repaired by an authorized technician or replaced. The handles must be kept clean, dry and free from oil and grease at all times. A properly maintained tool reduces the risk of binding and is easier to control. Sharp tools are safer than tools which have become dull because you do not have to apply excessive amounts of force to make your cuts. Applying excessive force can lead to slips and damage to your work or personal injury.
4. Remove adjusting keys and wrenches. Check that keys and adjusting wrenches are removed from the tool or machine before connecting it. A wrench or key that is left attached to a rotating part of the tool increases the risk of personal injury.
5. Avoid unintentional starts. Be sure that the throttle is in neutral or OFF position when not in use and before connecting it to any air source. Do not carry the tool with fingers near or on the switch.
6. Only use the lubricants supplied with the tool or specified by the manufacturer. Other lubricants may not be suitable and may damage the tool or even make the tool explode.
7. When not in use for an extended period, apply a thin coat of lubricant to the steel parts to avoid rust.
8. Maintain label and name plate on the tool. These carry important information. If unreadable or missing, contact Princess Auto for a replacement.

AIR SOURCE

1. Disconnect air supply. Disconnect tools from air pressure source when not in use, before cleaning, servicing or changing a piece or accessory. After disconnecting, discharge any residual air pressure.
2. Do not use tools if the trigger switch does not function properly. Any tool that cannot be controlled with the ON/OFF switch is dangerous and must be repaired.
3. Use proper size and type of air pressure line and fittings. The recommended air line for a tool with a 1/4" inlet is 3/8" I.D.
4. Always verify prior to using a tool that the air source has been adjusted to the rated air pressure or within the rated air-pressure range. Over pressurizing a tool may cause bursting, abnormal operation, breakage of the tool or serious injury to persons. Use only clean, dry, regulated compressed air at the rated range as marked on the tool.
5. Never use pure oxygen, carbon dioxide, combustible gases or any bottled gas as an air source for a tool. Such gases are capable of causing an explosion and serious injury to persons. Do not use an air source besides an air compressor to power this tool.
6. Always use an air regulator, an in-line filter and a moisture trap in your compressed air system. These accessories will increase the tool's life and keeps the tool in good working condition. See the diagram above for recommended components of an air line.
7. Drain the air tank daily. Water in the air line will damage the tool.
8. Clean air inlet filter weekly.
9. Avoid using an unnecessarily long air hose. Choose a hose that is appropriate for the situation, as a hose that is too long and running across the floor can be more dangerous than helpful.
10. Keep hose away from heat, oil and sharp edges. Check hose for wear, and make certain that all connections are secure.
11. Always carry a tool by its handle, never carry the tool by the air hose.
12. Line pressure should be increased to compensate for unusually long air hoses (over 8 metres). The hose diameter should be 3/8" I.D.
13. Air tool CFM consumption ratings are based upon a 25% duty cycle. If you require continuous duty, a larger compressor will be required (eg. 4.0 CFM tool at continuous duty requires 16.0 CFM to function at maximum torque).

LUBRICATION

1. All air tools are packed in grease to prevent corrosion of internal parts during shipping and storage. We recommend you clean this out to have optimum performance from your new air tool. Add a generous amount of air tool oil in the air inlet, then run the tool under no load until exhaust is clear to remove packing grease. To maintain, add only one or two drops daily.
2. It is very important that the tool be properly lubricated. Without proper lubrication, the tool will not work properly and parts will wear prematurely. Manually dropping a drop or two of air tool oil once a day into the tool's male connector is better than using an automatic in-line lubricator, which should only be required when there are multiple users of the same tool.
3. Keep the air line lubricator filled and correctly adjusted. The in-line lubricator should be regularly checked and filled with air tool oil. Proper adjustment of the in-line lubricator is performed by placing a sheet of paper next to the exhaust ports and holding the throttle open approximately 30 seconds. The lubricator is properly set when a light stain of oil collects on the paper. Excessive amounts of oil should be avoided.
4. Air tool oil is the only recommended lubricant for use in all air tools. Do not try to use other types of lubricants to oil your tools. Using the wrong lubricant will cause premature tool failure and / or loss of power. Use only recommended lubricants, specially made for pneumatic applications. Substitutes may harm the rubber compounds in the tool's O-rings and other rubber parts.
5. Oiling your air tool regularly is important, but it is also important not to OVER oil your air tool. Over oiling can cause premature tool failure. Your tool may not be ruined, but it will begin to experience loss of power that will continually get worse until it no longer works. The tool then has to be taken apart and cleaned of excess oil.
6. In the event that it becomes necessary to store the tool for an extended period of time (overnight, weekend, etc.), it should receive a generous amount of lubrication at that time. The tool should be run for approximately 30 seconds to ensure oil has been evenly distributed throughout the tool. The tool should be stored in a clean and dry environment.

WARNING! NEVER use WD-40 to clean or lubricate your air tool. WD-40 is a solvent that will break down the internal grease and cause the air tool to seize up.

VIBRATION PRECAUTIONS

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders.

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check ups to ensure medical problems are not being caused by or worsened from tool use. Pregnant women or people who have impaired blood circulation to the hands, past hand injuries, nervous system disorders, diabetes or Raynaud's Disease should not use this tool. If you feel any medical symptoms related to vibrations (such as tingling, numbness, and white or blue fingers), seek medical attention as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood flow to the hands and fingers, increasing the risk of vibration-related injury.
3. Wear suitable gloves to reduce the vibration effects on the user.
4. Use tools with the lowest amount of vibration when there is a choice between different processes.
5. Do not use for extended periods. Take frequent breaks when using this tool.
6. Let the tool do the work. Grip tool as lightly as possible (while still keeping safe control of it).
7. To reduce vibrations, maintain tool as explained in this manual. If abnormal vibrations occur, stop using this tool immediately.
8. This tool will not stop moving immediately. Do not lay the tool down or leave it unattended until it has come to a complete stop. A part that is moving could make the tool jump or grab a surface and pull the tool out of your control.

UNPACKING

1. Carefully remove the parts and accessories from the box.
2. Make sure that all items listed in the parts lists are included.
3. Inspect the parts carefully to make sure no breakage or damage occurred during shipping.
4. Do not discard the packaging material until you have carefully inspected and satisfactorily operated the tool.

WARNING! If any part is missing, do not operate the tool until the missing parts are replaced. Failure to do so could result in serious personal injury.

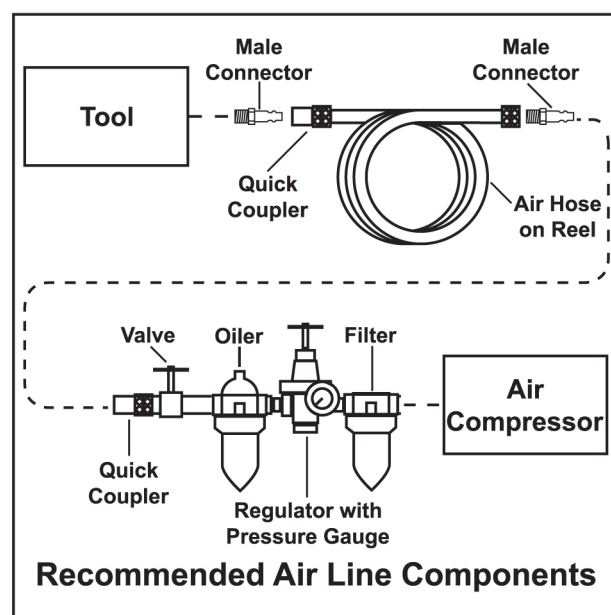
MAINTENANCE

Before making any adjustments or changing any accessory, turn off the tool and unplug it from its air source.

1. Check for damaged parts. Before using any tool, any part that appears to be damaged should be carefully checked to determine that it will operate properly and perform its intended functions. Check for alignment and binding of moving parts, for broken parts or mounting fixtures, or for any other condition that may affect proper operation. Any part that is damaged should be repaired or replaced by a qualified technician.
2. When servicing, use only identical replacement parts. Only use accessories intended for use with this tool. Replace damaged parts immediately.
3. Keep the tool clean. Wipe the tool with a clean cloth and periodically blow out all areas with compressed air. If compressed air is not available, use a brush to remove dust from all areas. Do not use harsh chemicals or solvents to clean the tool. These chemicals could seriously damage the plastic housing.
4. Regularly inspect all mountings and screws to ensure tightness. Should any screws become loose, tighten immediately.
5. If repairs are required, bring your tool to an authorized service center.

AIR SOURCE INSTALLATION

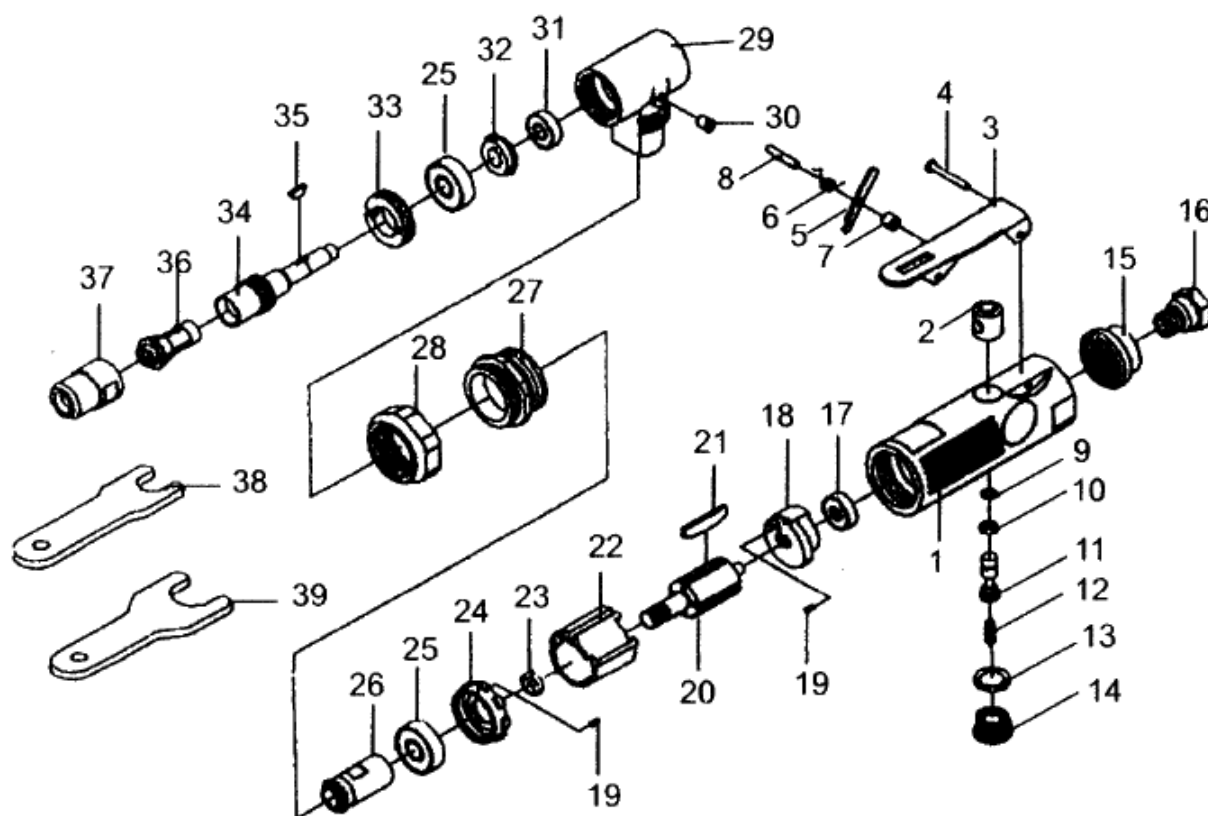
1. Set the air pressure regulator on the air compressor to 90 PSI. Do not exceed the tool's recommended air pressure. Excess pressure could result in damage to the tool, to your work piece or serious injury.
2. Prepare a standard 1/4" air connector for use with your tool. Wrap the threaded portion of the air connector with thread tape. Attach it to the tool's air inlet. Tighten securely.
3. Attach a standard quick connector to the air source's hose. Attach the air hose to the tool.
Note : If you are not using an in-line oiler, add a few drops of air tool oil in the tool's air inlet before use. In the same manner, add a few drops after every hour of use.
4. Check the air line and its connections for air leaks.
Do not use this tool until you have repaired all air leaks.



Note: Turn off the air compressor, disconnect the air pressure hose and discharge any residual pressure inside the tool before changing accessories or making any adjustments to the tool. Failure to do so could result in severe injury, tool or property damage.

TROUBLE SHOOTING

Problem(s)	Possible cause(s)	Suggested solution(s)
Tool runs at normal speed but loses power under load.	Motor parts worn.	Have a qualified technician replace worn parts.
Tool runs slowly. Air flows slightly from exhaust.	Motor parts jammed with dirt particles.	1. Check air inlet filter for blockage. 2. Pour air tool lubricating oil into air inlet as per instructions. 3. Operate tool in short bursts quickly reversing rotation back and forth where applicable. 4. Repeat above as needed. If this fails return to service center.
	Air flow blocked by dirt.	
Tools will not run. Air flows freely from exhaust.	O-rings throttle valve dislodged from seat inlet valve.	1. Pour air tool lubricating oil into air inlet as per instructions. 2. Operate tool in short bursts of forward and / or reverse rotation where applicable. 3. Tap motor housing gently with plastic mallet. 4. Disconnect supply. Free motor by rotating drive shank manually where applicable 5. If tool remains jammed return to service centre.
Tool will not shut off.	O-rings throttle valve dislodged from seat inlet valve.	Have a qualified technician replace the O-ring.
Loss of power or erratic performance.	Excessive drain on the air line. Moisture or restriction in the air hose. Incorrect size or type of hose connectors.	Check the air supply. If tool is not corrected to a 1/4" line, connect it properly.
Note: Repairs should be carried out by a qualified person		



No.	Description	Qty
1	Housing	1
2	Valve bushing	1
3	Trigger	1
4	Trigger pin	1
5	Safety lever	1
6	Spring	1
7	Washer	1
8	Pin	1
9	O-ring	2
10	O-ring	2
11	Valve stem	1
12	Spring	1
13	O-ring	1
14	Valve plug	1
15	Muffler	1
16	Air inlet	1
17	Bearing	1
18	Rear plate	1
19	Pin	1
20	Rotor	1

No.	Description	Qty
21	Rotor blade	4
22	Cylinder	1
23	Rotor Washer	2
24	Front plate	1
25	Bearing	1
26	Umbrella gear (active)	1
27	Screw	1
28	Nut	1
29	90° elbow	1
30	Press-in oil valve	1
31	Bearing	1
32	Umbrella gear (driven)	1
33	Slot nut	1
34	Transmission shaft	1
35	Semicircular key	1
36	1/4" collet	1
37	Collet nut	1
38	Wrench	1
39	Wrench	1